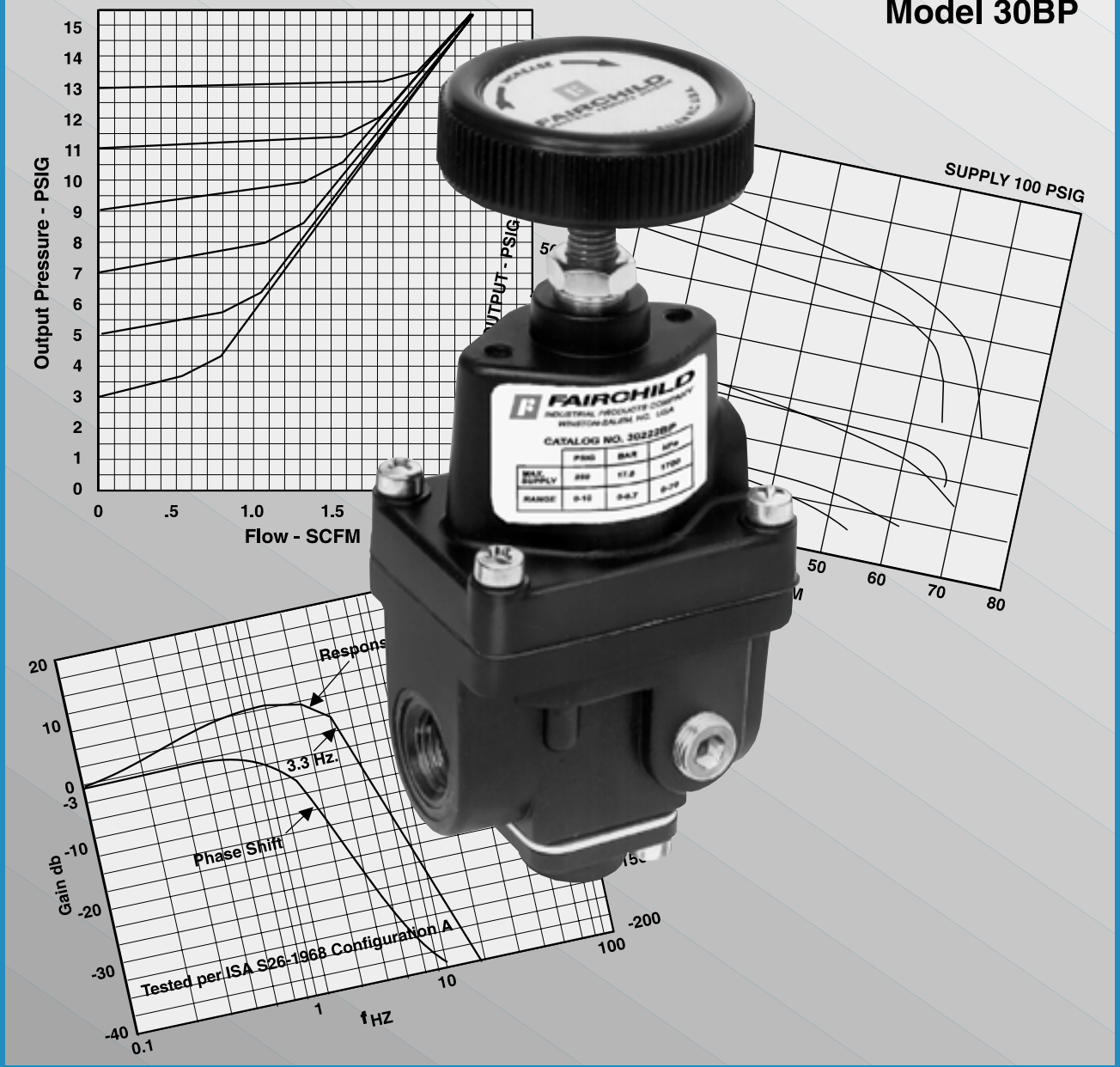
FAIRCHILD

MIDGET PRECISION BACK PRESSURE REGULATOR

Model 30BP



FAIRCHILD
INDUSTRIAL PRODUCTS COMPANY

GENERAL INFORMATION

MODEL 30BP MIDGET PRECISION BACK PRESSURE REGULATOR

APPLICATIONS

The Model 30BP is a high capacity regulator that provides relief of excess pressure in a pneumatic system.

The combination of high capacity and compact size make the Model 30BP an excellent choice for a wide range of precision applications including: Precise Control of Paper Machinery Felt Guides, Supply of a Precise Repeatable Signal to a Pneumatic Clutch, or Control of Cylinder Pressure.

FEATURES

Performance

- The Model 30BP is sensitive to 1/4" Water Column variation which permits use in precision processes.

Functional

- Flow of up to 40 SCFM allows use in applications with high flow requirements.

Physical

- A Separate Control Chamber and Aspirator Tube isolates the diaphragm from the main flow eliminating hunting and buzzing.

OUTLINE DIMENSIONS

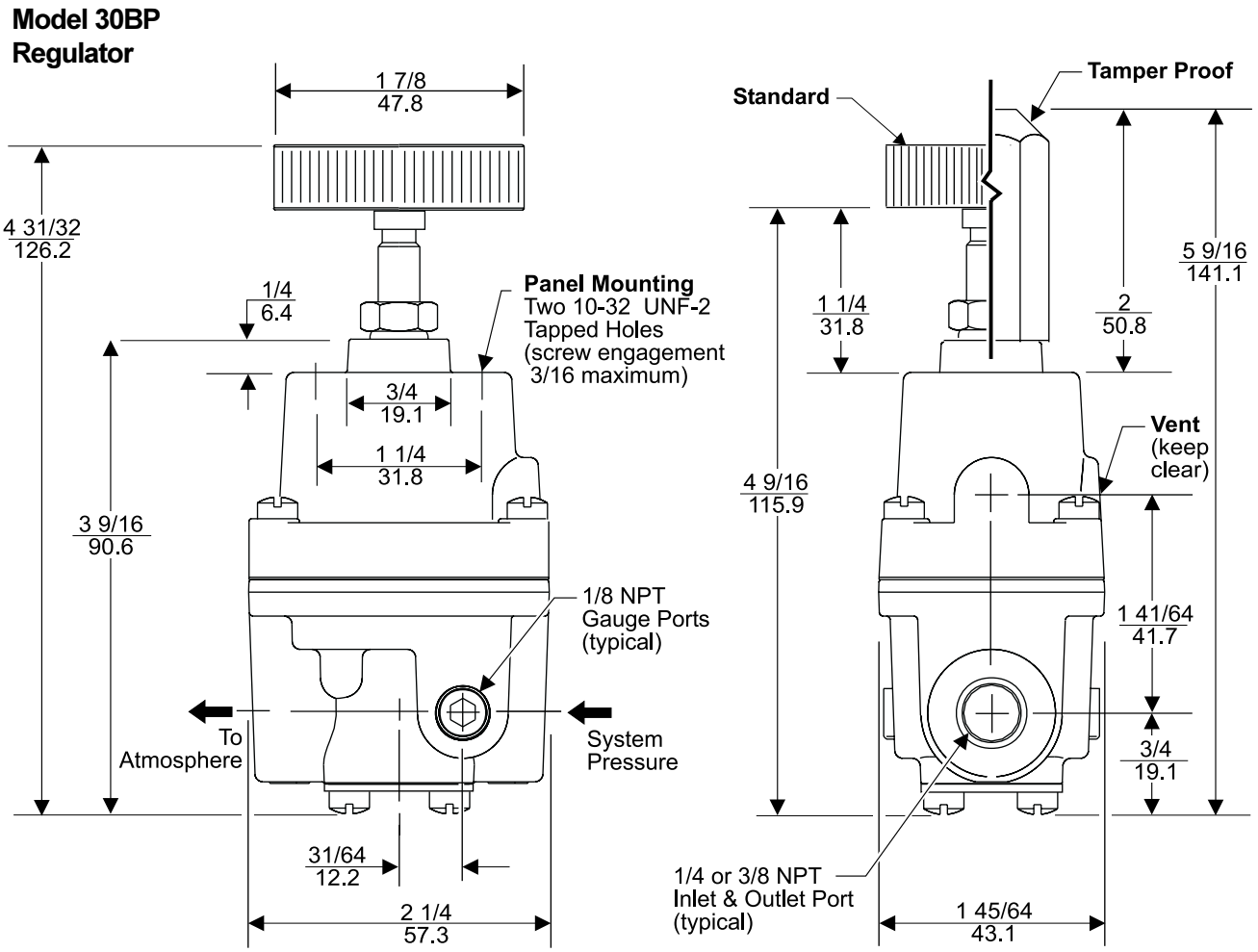


Figure 1. *Outline Dimensions.*

SPECIFICATIONS

FUNCTIONAL SPECIFICATIONS

	Set Point Range **2-100 psig** **[0.15-7.0 BAR]** **(15-700 kPa)**
System Pressure (Max.)	150 psig [10.0 BAR] (1000 kPa)
Flow Capacity (SCFM)	40 (68 m^3/HR) @ 100 psig, [7.0BAR], (700 kPa).
Ambient Temperature	-40° F to +200° F (-40° C to +93° C)

PERFORMANCE SPECIFICATIONS

Sensitivity	1/4" (.63 cm) Water Column.

Materials of Construction

Body and Housing	Aluminum
Trim	Brass
Diaphragms	Nitrile on Dacron

CROSS SECTION

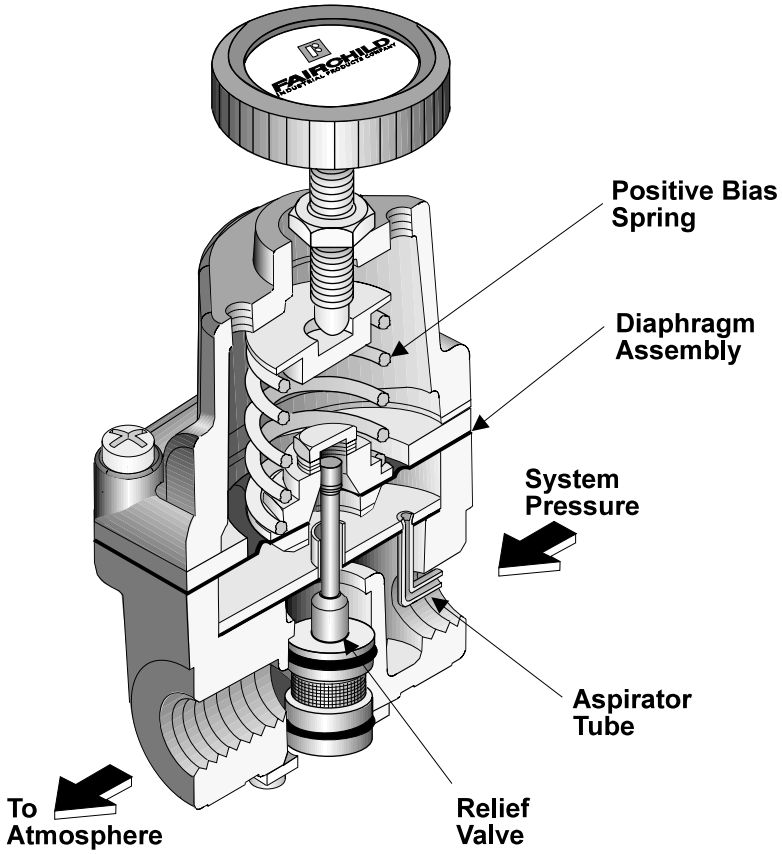


Figure 3. *Model 30BP Detail Drawing.*

OPERATING PRINCIPLES

The Model 30BP Regulator uses the force balance principle to cause the Relief Valve to open and vent system pressure when set point is reached.

System pressure is transmitted through the Aspirator Tube to the underside of the Diaphragm Assembly. When the range screw is adjusted for a specific set point, the Positive Bias Spring is compressed. It exerts a force on the top of the Diaphragm Assembly. As long as the pressure acting on the underside of the Diaphragm Assembly produces a force less than the spring force acting on the top of the Diaphragm Assembly, the Relief Valve remains closed. As system pressure increases, the force on the bottom of the Diaphragm Assembly increases until it reaches the set point. As system pressure increases beyond set point, the assembly moves upward, lifting the Relief Valve from its seat and causing the system air to vent.

If system pressure decreases below set point, the decrease in pressure is transmitted through the Aspirator Tube to the bottom of the Diaphragm Assembly. The assembly moves downward and the force exerted by the range spring on the top of the Diaphragm Assembly will cause the Relief Valve to close. For more information, see Figure 3. “Model 30BP Detail Drawing” above.

INSTALLATION

For Installation Instructions refer to the *Fairchild Model 30BP Midget Precision Regulator IOM,* **IS-100030BP.**

TYPICAL APPLICATIONS

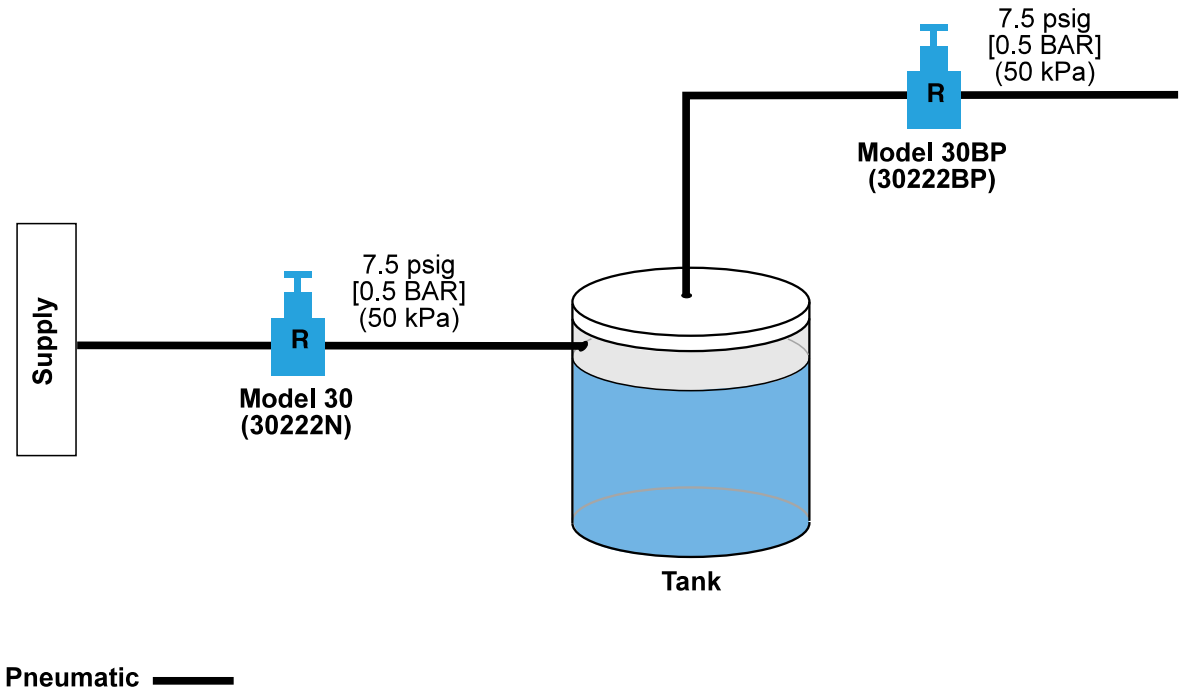


Figure 4. *Tank Blanketing Application for the Model 30BP Regulator.*

TYPICAL APPLICATIONS

The Model 30BP is used to maintain a constant blanket pressure over the top of the liquid in the tank during outflow and refill.

The Model 30 non-relieving regulator with a setpoint of 7.5 psig, [0.5 BAR], (50 kPa) is used to maintain a blanket on the tank. In order to have an exhaust rate adequate to maintain the blanket pressure when the tank is being refilled, a Model 30BP set at 7.5 psig, [0.5 BAR], (50 kPa) is used as an exhaust regulator. For more information, see Figure 4. “Tank Blanketing Application for the Model 30BP Regulator” above.

ORDERING INFORMATION

Catalog Number 3 0 2 ☐ ☐ BP ☐

Pressure Range

psig	[BAR]	(kPa)	
0-2	[0-0.1]	(0-15)	**(1)**
0-10	[0-0.7]	(0-70)	**(2)**
.5-30	[.03-2]	(3-200)	**(3)**
1-60	[0.1-4]	(10-400)	**(4)**
2-100	[0.1-70]	(15-7000)	**(5)**

Pipe Size

1/4" NPT	**(2)**
3/8" NPT	**(3)**

Options

Tamper Proof	**(T)**
Screwdriver Adjust	**(S)**
Silicone Elastomers [1]	**(A)**
Viton Elastomers	**(J)**
BSPT (Tapered)	**(U)**
BSPP (Parallel) [2]	**(H)**

[1] *Maximum System Pressure - 75 psig, [5.0 BAR], (500 kPa)*
[2] *BSPP Threads in Inlet & Outlet Ports Only. Others BSPT.*

ISO 9002 Certified

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